

PREY CAPTURE BY PEREGRINE FALCONS WINTERING ON SOUTHERN VANCOUVER ISLAND, BRITISH COLUMBIA

DICK DEKKER

3819-112A Street, Edmonton, Alberta, Canada T6J 1K4

ABSTRACT.—Peregrine falcons (*Falco peregrinus*) wintering on southern Vancouver Island, British Columbia, were observed to kill 52 prey, of which 46 were ducks of five species. When attacked, 24 ducks were sitting on land, 22 were in flight. The most common hunting method was a low surprise attack initiated from a high tree perch. Prey were seized in the feet and carried down or captured on the ground. Peregrines made up to three kills each day. Klepto-parasitism by other raptors, particularly eagles, resulted in the loss of 17 ducks before the peregrines could take a full meal. Remains of all other large prey were utilized by scavengers after the falcon had finished feeding.

KEY WORDS: *British Columbia; Falco peregrinus; klepto-parasitism; peregrine falcon; prey capture; wintering.*

Captura de presas por *Falco peregrinus* invernantes en el sur de Vancouver Island, British Columbia

RESUMEN.—Individuos de *Falco peregrinus* invernando en el sur de Vancouver Island, British Columbia, capturaron 52 presas de las cuales 46 pertenecían a cinco especies de patos. 24 patos fueron atacados en tierra y 22 en vuelo. El método de caza más común correspondió a un ataque bajo y sorpresivo, iniciado desde una percha ubicada en árboles grandes. Las presas eran tomadas con las patas o capturadas en el suelo. *Falco peregrino* realizaba tres capturas diarias. Por efecto del cleptoparasitismo de otras rapaces, particularmente aguilas, los halcones perdieron 17 patos antes de ingerirlos completamente. Los restos de grandes presas fueron utilizados por carroñeros luego que los halcones terminaban de comer.

[Traducción de Ivan Lazo]

I observed peregrine falcons (*Falco peregrinus*) on Vancouver Island, British Columbia, on 98 d from January to February of 1980–94, usually from first light to dusk. The study area was approximately 3 km² of agricultural fields surrounded by farms and woodlots near Victoria. Small ponds, drainage ditches, flooded fields and meadows, particularly after heavy rain, attracted up to a thousand ducks, mainly mallards (*Anas platyrhynchos*) and American wigeons (*A. americana*). I traversed the area by vehicle and on foot. Peregrines were located by frequently scanning through binoculars or a telescope and by noting alarm reactions of prey species. If possible, falcons were classified to age and sex. I minimized disturbance by watching the falcons from a distance, usually more than 200 m. Flying peregrines were kept in view through binoculars to observe potential interactions with prey species. Falcons that were feeding on a kill were watched until they flew out of sight. Prey remains were identified but left in the field for peregrines or scavengers.

Peregrines were sighted on all but three of the 98 d. Observations, either of a single falcon or several different birds in succession, varied from a few min-

utes to 9 hr/d. The earliest sightings occurred within one-half hour after first light, and all birds under observation flew away just before or at dusk.

OBSERVATIONS

The total number of prey captures observed was 52, of which 46 were ducks of five species: 19 American wigeon, 13 northern pintails (*A. acuta*), six green-winged teal (*A. crecca*), one ring-necked duck (*Aythya collaris*), one bufflehead (*Bucephala albeola*), and six ducks of unknown species. Seventeen of these prey were male, 14 female, and 15 of unknown sex. Mallards were seldom attacked and never seen to be taken. All peregrines, including small males, seemed eager to pursue teal, probably because they are easily killed and carried. One large female peregrine hunted and killed only teal in 15 consecutive days of observation, disregarding all other species.

Peregrines used several basic strategies in hunting ducks. The majority (30 of 46) of these hunts observed were initiated from a perch and directed at ducks resting or feeding on the ground or in shallow water 0.5 km or more away. This still-hunting meth-

od was used most often by large females that habitually perched on trees. A typical attack involved a fast flapping flight on a descending course directly toward groups of ducks on wet ground or on the edge of water. In the last stage of the attack the falcon skimmed with flexed wings over the ground or water. This was especially effective if the falcon's approach was screened by reeds or bushes.

When ducks detected a falcon, they flushed and fled to the nearest water where they were not attacked further. After unsuccessful hunts, falcons returned to a perch and resumed sit-and-wait hunting. Ducks that had been attacked several times became very wary. When there were large numbers of ducks and gulls on the fields, a flying falcon was detected soon, and prey flocks moved to the safety of water. In such cases, the falcon aborted its attack and returned to a perch. On some days, a falcon was seen to make 10–15 surprise attacks over a period of 3–7 hr without making a kill. On other days, falcons were successful on their first try, but more commonly they required three to four attempts.

Falcons tried to intercept flying ducks that passed over the area at low altitudes, especially if there were no resting or feeding waterfowl on the fields. In such attacks, falcons seized ducks from behind and carried them to the ground. Ducks that were met head-on, with the falcon approaching low over the ground, were seized from below during a steep upward swoop of 10–20 m.

Peregrines sometimes attacked ducks approaching at great altitudes. Starting from a perch, they climbed to meet flocks that were 1 km or more away. After the falcon had reached about the same altitude, the ducks scattered. If pursued further, they descended at varying angles to the ground, attempting to reach water or other cover, sometimes between or behind trees. Three pintails were killed after they landed, and one teal was seized low over the ground.

In total, attacks on flying ducks resulted in 19 aerial captures at heights of 0–20 m over open terrain. In three of these cases, large ducks were seized over water and released alive after a few moments. One was held upside-down by the posterior end. After losing altitude and unable to carry its prey to dry land, the falcon dropped the duck and made no attempt to retrieve it after it splashed into water. Peregrines had no difficulty carrying small ducks such as teal and usually consumed them on trees or other high perches. Ducks the size of wigeon or larger were eaten on the spot, except in one incident

when a female peregrine seized a wigeon low over a frozen pond and carried it 80 m to the shore.

In the least common hunting method, soaring peregrines stooped at prey flying below. Of two such attacks seen, one resulted in the capture of a ring-necked duck. Such hunts, taking place at great altitudes, may be more common than reported here because they easily escape notice. During migration in Alberta, soaring peregrines often stooped at ducks and shorebirds, either flying or sitting on land or in shallows (Dekker 1980, 1988).

Twenty-four ducks were seized very close to or on the ground, but in 11 of these hunts the exact moment of impact was not seen clearly due to distance, vegetation, rising ground, or buildings that obscured the view. In all prey captures observed closely, the peregrine "bound" to its prey, seizing it directly in the feet and holding on. Not a single "knock-down" was recorded during this study, although routine escape techniques of ducks—plunging down into water and diving to dodge the attack—made it look as if an aerial hit had taken place. Knock-downs were also rare in a study of migrating peregrines which included only one crippling aerial strike in 30 captures of ducks (Dekker 1987, unpubl. data).

Duck kills occurred throughout the day but particularly at 1000–1200 H with nine captures each hour. At 1200–1500 H, captures varied from two to four and at 1500–1700 H, five to six. From 0800–1000 H, four and five kills were recorded per hour.

Although small male peregrines pursued teal (with one capture seen), they hunted mostly passerines, particularly American robins (*Turdus migratorius*) and European starlings (*Sturnus vulgaris*). Two flying passerines were met head-on; one was seized directly and the other tried to dodge the attack by plunging steeply to the ground but was seized by the falcon in a stoop. One robin was taken after it flushed from the ground just ahead of an immature male peregrine that had made a long-range surprise attack initiated from a perch. Male peregrines made three prolonged pursuits of sandpipers, of which one was successful.

Rock doves (*Columba livia*) were common in the area and sometimes attacked, but rarely captured. One courting rock dove, sailing over a farmyard, was seized directly from behind by an adult female falcon that made a fast surprise attack between trees and buildings. Another was taken after a twisting pursuit by an adult male peregrine. This rock dove had a

full crop of grain, perhaps rendering it vulnerable.

I am not able to give success rates because it was often not clear whether aborted hunts were serious attempts at catching prey. Earlier I reported a success rate of 21% ($N = 43$; Dekker 1987). Anderson and DeBruyn (1979) reported a winter success rate of 26% ($N = 57$). These values are higher than the 8.0% ($N = 1125$) during migration in central Alberta (Dekker 1988, unpubl. data). Roalkvam (1985) has reviewed hunting success rates of breeding, migrating and wintering peregrines from a wide variety of localities.

Whether pursued by other raptors or not, peregrines always took small prey to a high perch. Male peregrines migrating in central Alberta consumed small prey while soaring to avoid piracy from other raptors (Dekker 1979, 1980), but eating on the wing was not seen during this study. Peregrines sitting on the ground with freshly caught ducks were often approached by glaucous-winged gulls (*Larus glaucescens*) or northern harriers (*Circus cyaneus*) that waited nearby while the falcon continued feeding without apparent concern. In contrast, peregrines always reacted with alarm at the approach of bald eagles (*Haliaeetus leucocephalus*), red-tailed hawks (*Buteo jamaicensis*), rough-legged hawks (*B. lagopus*), golden eagles (*Aquila chrysaetos*), and gyrfalcons (*Falco rusticolus*).

At the approach of eagles, feeding peregrines flew up from the ground and cacked, but they did not attack the eagle once it seemed determined to pick up the carcass. The eagle usually retrieved such prey without alighting. Bald eagles pirated 10 ducks shortly or immediately after they had been killed by peregrines. On 21 January 1993, from 0800–1715 H, I watched an adult female peregrine make 20 attacks on ducks feeding or resting on surrounding meadows or fields, all initiated from the same tree perch. This falcon captured three wigeon, but two of these were almost immediately lost to adult bald eagles. The three kills occurred at 0900, 1615, and 1650 H. The last kill was made close to dusk when no eagles were present, and the falcon fed until 1720 H. Although golden eagles were rare in the area, they took freshly caught ducks from peregrines on three occasions.

Red-tailed hawks took two freshly caught ducks from medium-sized adult peregrines. In one of these incidents, the red-tail was robbed in turn by a rough-legged hawk. The peregrine perched in a tree and returned to its kill after the buteos departed. Large

female falcons were capable of driving off red-tailed hawks.

Gyrfalcons elicited fierce aggressive behavior from peregrines. On one occasion, an immature male gyrfalcon pirated a freshly caught pintail from an adult female peregrine.

Piracy by eagles forced some falcons to kill up to three ducks a day. Frequent klepto-parasitism was also observed in Washington by Anderson and DeBruyn (1979) who reported that a wintering female peregrine killed three ducks in one day of which the first two were soon lost to other raptors. The same authors assumed that some peregrines killed twice a day, since they had a full crop in the early morning and hunted again in the evening. This assumption may be false, since two daily periods of hunting do not automatically result in two kills. Peregrines that make a late evening kill may eat from the same prey in the morning. Peregrines returning in the early morning to the previous night's kill were reported during spring migration in Alberta (Dekker 1984). During this study, a peregrine was seen to pick up the remains of a duck it had killed and partly consumed the day before, but scavenging gulls had already removed all edible tissue. Most kill remains were utilized quickly by scavengers and practically all duck carcasses were eventually carried away by eagles, giving peregrines no chance to eat twice from the same prey.

The activities of other raptors sometimes assist peregrines. At the low passage of harriers or eagles, ducks rise from water, rendering them vulnerable to a peregrine. On at least three occasions, falcons captured ducks that were flushed by bald eagles. In the same way, peregrines captured two pintails, two teal, and one bufflehead that had been flushed from ponds or ditches by birdwatchers or me.

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